

## **REMARKS**

This paper responds to the final Office Action issued July 1, 2008.

Claims 1-5, 7, 15-17, 22-29, 37, 41 and 42 stand rejected under 35 USC 103(a) as being unpatentable over Franco et al. Reconsideration is urged. While the allowability of certain claims is acknowledged, all are submitted to be allowable.

The invention relates to a system in which electrical analysis of a received signal that has been transported across an optical network can give information concerning individual spans of the optical network.

The application discloses many different analyses which can be carried out on the received optical signal after it has been converted into the electrical domain. These analyses all have in common that they are based on spatially resolving the non-linear distortion, i.e. identifying the location along the span at which a non-linear distortion has been introduced.

Applicant submits that the disclosure by Franco et al. does not teach all of the features of independent claims 1, 22, 23 and 41. Specifically, Franco et al. do not disclose deriving characteristics of individual spans of an optical communications link, nor do they disclose spatially resolving non-linear distortion from different parts of the communications link.

Franco et al. is directed to reducing noise in a long-distance optical communications system (see title, abstract).

The Examiner has cited a combination of columns 13, 14 and 19 in respect of the claimed feature of deriving information concerning the characteristics of different spans. However, columns 14 and 19 do not detail respective parts of this feature, nor can they be combined to disclose the feature as a whole. Firstly, column 14, lines 25-27, simply details that an optical component may be optical fiber having

characteristic properties, all of which would be well known to the skilled reader. Secondly, column 19, lines 8-17, only details the provision of simulation results of the transmission of signals that can be used to assess received signal quality. Thus, column 19, lines 8-17, of Franco et al only presents that a single measure of signal quality is obtained for an entire optical communication link, and its dependency on characteristics of a nonlinear filter are investigated by changing (known) parameters of a filter. This is in complete contrast to the claimed concept of analysis in the electrical domain of a received signal to determine information concerning the characteristics of different spans of the optical link.

In this regard, it is not understood how a disclosure of adapting signals to known characteristics of an optical communications link can be said to equate to analyzing a received signal to determine characteristics of different spans making up an optical communications link. Unlike assessing the quality of a received signal, determination of the characteristics of individual spans requires information to be spatially resolved so as to be related to one or more specific locations in an optical communication link.

Indeed, there is no mention of spatially resolving information (such as non-linear distortion) from different parts of the communications link so as to determine information about the characteristics of individual spans. The Examiner has interpreted "spatially resolving" in what is submitted to be an unreasonably broad manner so as encompass "obtaining various measurements in the transmission line and determining error based on such measurement". It is respectfully submitted that such an interpretation is both unsubstantiated and incorrect. Based on the teachings of the specification, and the generally accepted dictionary definition of both "spatially" and "resolving", a skilled reader would understand the expression to be more limiting than the interpretation given by the Examiner. Specifically, "spatially resolving" infers the separation or determination of a value (according to the verb "resolve") with respect to a spatial dimension (according to use of the adjective "spatial"). Simply obtaining various measurements, and determining error based on the measurement,

has no such spatial limitation and therefore cannot be included within the scope of "spatially resolving".

The independent claims are thus clearly distinguished over Franco et al.

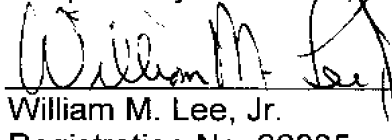
Since, the approach in Franco et al. is to use filtering in order to improve the quality parameter, it is of no relevance to the identification of nonlinearities at different positions along an optical link and provides no suggestion of deriving such information from a digital analysis of a received signal in the electrical domain. Further, no other cited references present the concept of deriving information concerning the characteristics of different spans by spatially resolving non-linear distortion from different parts of the network. Thus, the claimed invention cannot be said to obvious in view of Franco et al.

Having addressed the rejections raised against all independent claims, it is submitted that the remaining rejections raised against the dependent claims are now moot. Although no discussion of any remaining rejections raised against the dependent claims is given, it should not be taken that the rejections raised are accepted.

It is submitted that this application is now in condition for allowance. Such action is respectfully solicited

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Respectfully submitted,

A handwritten signature in dark ink, appearing to read "William M. Lee, Jr.", is written over a horizontal line.

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